Statewide On-Call Preliminary Engineering Prequalified List of Consultants for Locally Administered Local Public Agency (LPA) Qualifications-Based Selection Contracts

Quantum Construction Consultants, LLC
27 Locke Road, Concord, NH 03301
603-224-0859

December 30, 2022

Mr. William J. Oldenburg, PE
Assistant Director of Project Development
Chairperson, Consultant Selection Committee

Sent via email: william.j.oldenburg@dot.nh.gov

SUBJECT: Statewide On-Call Preliminary Engineering Prequalified List of Consultants for locally administered Local Public Agency (LPA) Qualifications-Based Selection Contracts

Dear Mr. Oldenburg:

Quantum Construction Consultants, LLC (QCC) is very interested in being included on the prequalified list of Highway and/or Bridge Design consultants to be available for Local Public Agencies (LPA) to short list from in the development of Qualifications-Based Selection Contracts Agreements in support of locally administered projects. QCC is a unique engineering firm that specializes in providing preliminary design, final design and development of contract plans and documents for highway, bridge, and/or alternative delivery projects. We have a long-standing professional relationship with the staff of Fieldstone Land Consultants, PLLC for survey and environmental services and S.W. Cole Engineering, Inc. for geotechnical engineering.

Experience and Resources: QCC has the experience, resources, and commitment to provide the LPA practical and efficient engineering design services. Our project team is led by Anna Giraldi, PE, Chief Bridge Engineer, who has over 25 years of bridge design and construction experience, Doug Brodeur, PE Senior Civil Engineer who has over 20 years of experience, James Bouchard, Senior Roadway Engineer, who has over 40 years in the civil, transportation, and environmental disciplines, and Richard Wolf, Jr., President, who manages construction engineering and administration of QCC projects. Our in-house team is cross-trained and has expertise in each area of engineering design services required for this prequalified list. QCC technical staff members include Professional Engineers, a NETTCP QA Technologist, LPA certifications, and NBIS certification.

Goal: Our goal is to provide the LPA with a responsive team who is prepared to achieve the expected project outcome. We will work with the LPA to develop designs that fully support the requirements of their projects.

Our Team is excited about the opportunity to be included on the Preliminary Engineering Prequalified List and look forward to a favorable review.

Sincerely,

QUANTUM CONSTRUCTION CONSULTANTS, LLC

R. Wolf, Jr.

Richard Wolf, Jr.
President
rwolf@quantum-cc.com

Bedford Road experienced frequent roadway over topping. Based on hydraulic requirements, QCC designed a replacement structure that utilized a 90-foot span plate girder, precast concrete deck panel with cast-in-place concrete topping bridge deck, founded on steel piles with cast-in-place concrete pile caps. We encourage you to contact Kyle Fox, PE, former Merrimack Public Works Director, (978) 692-5520.

A successful project yields a satisfied Client, whether municipality or state agency, private or partnership. QCC's history of delivering successful projects to clients has yielded long standing professional relationships with these entities. Our approach is rooted in a thorough understanding of our Client's goals and their fiscal abilities balanced with NHDOT standards, State and Federal standards, stakeholder concerns, regulatory requirements, and utility accommodation.

The LPA Process

The consultant guides the LPA process on behalf of the Client as it is our duty to understand the processes required, the scope of work required for the project, adherence to milestone requirements, and the resources required for the project while providing full transparency and communication with the Client and stakeholders. The following is an outline of the LPA process:

Engineering Study – Identifies the problem, gathers information, evaluates options and provides recommendation.

- Local Concerns Meeting – Public Participation, Project Basis and Need, Identification of concerns /issues.
- Purpose and Need Statement Development – This action guides the project.
- Existing Conditions – Surveys, geotechnical investigations, traffic studies.
- Hydrology/Hydraulics – Determination of storm flows and sizing of conveyance structures/bridges.
- Utility Coordination – Private & public relocations/improvements required.
- Environmental Resources – Wetlands, Endangered flora & fauna present, shoreland protection;
    - NHDOT Natural Resources Agency coordination,
    - NHDES; USF&G; ACOE; NHDRED; NHNHB coordination.
- Cultural Resources – Historical & Archaeological elements and landscape;
    - NHDOT Cultural Resources Agency coordination,
    - NHDHR coordination.
- ADA Compliance – Are we servicing everyone?
- Alternatives Studies – Solutions versus least environmentally damaging practical approach.
- Conceptual Plans – Proposed layouts, structure types, utility impacts, abutter impacts.
- Construction Cost Estimates and Project Funding Matrices to assist Client with funding.
- Local Concerns Meeting – Presentation of Engineering Study and recommended solution.
- NHDOT Submission – Engineering Study Approval and Approval for Preliminary Design.

Preliminary Design (PPS&E) – Initiates the design process for the recommended solution.

- Preliminary Plans – Approximately 60% Design Level, Wetland Impact Plans.
- Environmental Documentation Process – NEPA and/or NHDOT short form approval, categorical exclusion, mitigation requirements.
- Utility Coordination – Agreements for relocation; relocation/improvements identified on plans.
- Cultural Resources – Additional cultural surveys, studies and sign-off.
- Technical Specifications – Utilize NHDOT Standard Specifications, Special Provisions as required.
- Natural Resources – Applications for Wetland, Shoreland, Water Quality, AoT, ACOE.
- Updated Construction Cost Estimates and Project Funding Matrices to assist Client with funding.
- Design Review with Client – Where are we, Client input, issues addressed, issues remaining, costs.
- NHDOT Submission –NEPA and/or NHDOT short form approval, approval for Final Design & ROW.

Final Design (PS&E) – Finalizes Project Development once NEPA and/or NHDOT short form approval has been received, ROW begins

- Final Plans – Approximately 95% Design Level.
- Natural Resources – Submission of applications for Wetland, Shoreland, Water Quality, AoT, ACOE.
- ROW/Easements – Easement Plans, DRAFT easement documents for Client, abutter meetings.
- Utility Certificates – Signoff by utility companies.
- Project Manual – Bidding & Contract documents, Federal Labor Compliance, Technical Specifications.
- Final Construction Cost Estimates and Project Funding Matrices to assist Client with funding.
- Design Review with Client – Ready to bid, evaluation of Nonstandard Procurement, Client input.
- NHDOT Submission – Approval for bid.

Bidding Assistance – Let's get this out to the Contractors!!

- 100% Design Level.
- Advertise, Pre-Bid Meeting, Addendums, Bidder Coordination.
- Bid Opening, Bid Review Analysis, Recommendation of Award to Client & NHDOT.
- Preparation of Contract Documents for Client and selected bidder.

Project Management, Schedule & Cost Control

QCC takes the responsibility as "keepers" of the project schedule and budget very seriously, so valued that QCC treats the cost of each of the above elements of our work as the "fourth and fifth dimension" of our design (time and money respectively). A truly successful project must work in all five dimensions.

Highway Design

QCC's highway competence and experience is varied and ranges from local rural road rehabilitation and improvements to interstate widening and ramp design. We regularly work with many municipalities developing roadway surface management programs, and have staff that has contributed to the UNH T2 program for pavement management. Similarly, we have assisted communities with storm drainage issues from area studies to rehabilitation/improvement programs utilizing innovative techniques such as sliplining, channel paving, and alternative drainage systems. Pedestrian travel is routinely incorporated into our projects, or as stand-alone such as sidewalk improvements and trail development.

Bridge Design

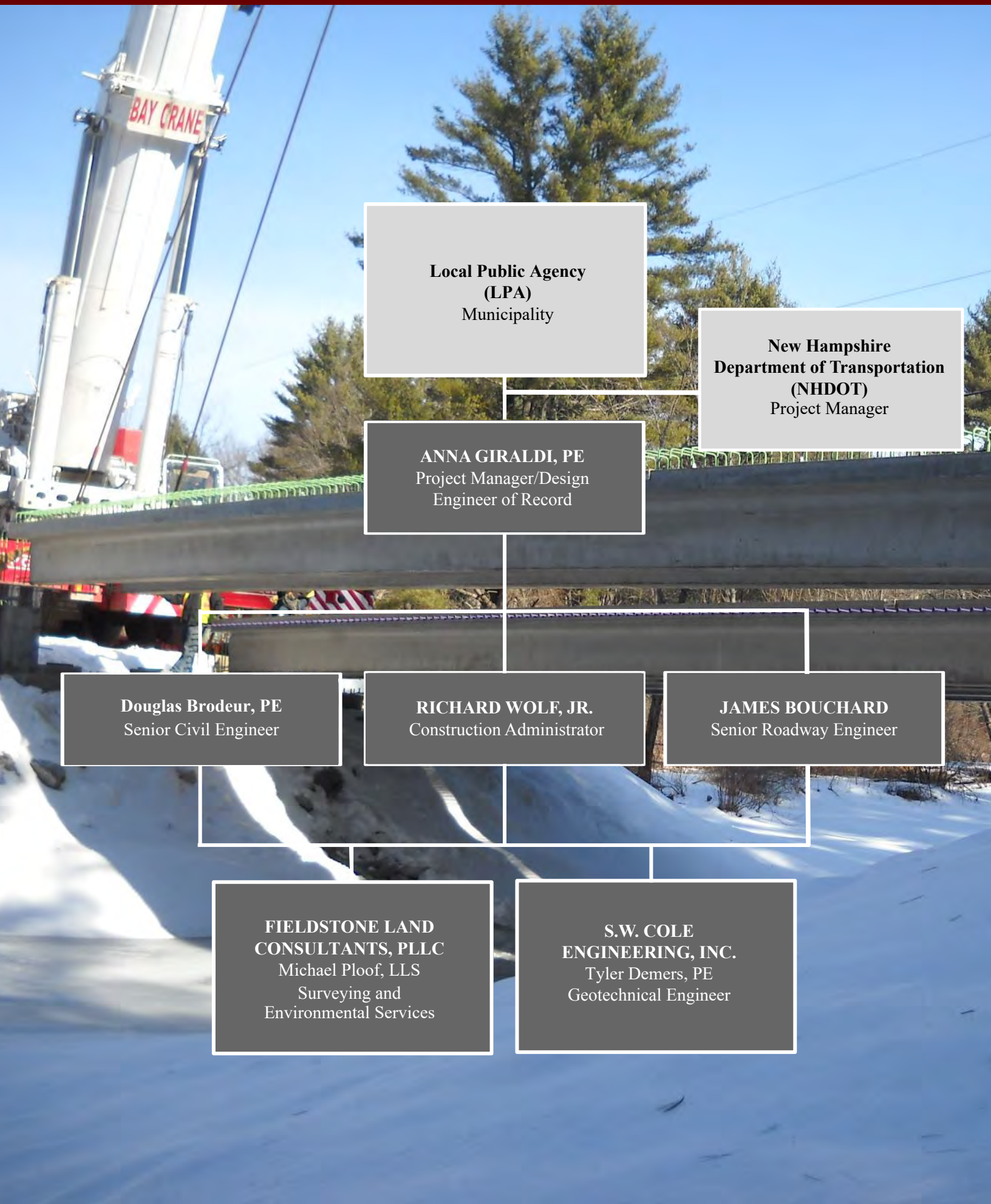
Municipally managed bridge design is the foremost specialty of QCC to the point that we cross train all of our staff in the elements of bridge and approach design. Our experience has included fast-track designs in response to failed structures, structures funded under a variety of Federal Funding programs, and a variety of almost every type of bridge available to the designer. We recommend the bridge type that is the most cost effective, meets the purpose and need, and provides the least environmentally damaging practical alternative. In addition, members of QCC's team are also NBIS bridge inspector certified and NETTCP QA Technologist certified to assist in the assessment and development of projects.

Natural & Cultural Resource Permitting

QCC does not just guide the process but our team actually undertakes the development of the required applications, alternatives analyses, supportive documents, conducts pre-application meetings with the resource agencies for local, regional, state and federal agencies for documentation, clearances and permitting. QCC has developed professional relationships with a team of specialized subconsultants for expedient and cost-effective field surveys and documentation that enables timely application development and submission.

ORGANIZATIONAL CHART AND PROJECT TEAM

ORGANIZATIONAL CHART



Local Public Agency (LPA)
Municipality

New Hampshire Department of Transportation (NHDOT)
Project Manager

ANNA GIRALDI, PE
Project Manager/Design Engineer of Record

Douglas Brodeur, PE
Senior Civil Engineer

RICHARD WOLF, JR.
Construction Administrator

JAMES BOUCHARD
Senior Roadway Engineer

FIELDSTONE LAND CONSULTANTS, PLLC
Michael Ploof, LLS
Surveying and Environmental Services

S.W. COLE ENGINEERING, INC.
Tyler Demers, PE
Geotechnical Engineer

Quantum Construction Consultants, LLC (QCC) has a long-standing professional relationship with the staff of Fieldstone Land Consultants, PLLC (FLC) and S.W. Cole Engineering, Inc. (SWC). Our Team has successfully partnered together on dozens of design, permitting and construction projects with varying scopes and has been able to consistently deliver quality services on time and on budget. The trust and open lines of communication we have developed through our long-standing professional relationships help us to identify potential issues ahead of time and make sound decisions to resolve them quickly.

QCC proposes to utilize the following highly qualified team members:

Quantum Construction Consultants, LLC of Concord, NH

QCC will be the prime consultant responsible for engineering, project management and direct coordination for assignments and work efforts. We have designed and managed dozens of municipal bridge projects funded under the NHDOT Municipally-Managed Bridge Aid Program and completed multiple NH Department of Administrative Services, Division of Public Works Design & Construction (DPW) Statewide Agreement contracts providing site and building design and construction engineering and inspection services. All key QCC staff is NHDOT LPA Certified.

Fieldstone Land Consultants, PLLC of Milford, NH

FLC will perform professional land surveying services, if required as part of the design contract. FLC will also provide environmental services, if required, to support the engineering efforts of our Team. QCC has partnered with staff from FLC on numerous successful municipal bridge, roadway, and building design projects and they possess all of the certifications required to perform these services.

S.W. Cole Engineering, Inc. of Somersworth, NH

SWC will perform subsurface investigations and geotechnical engineering services, if required. They also will undertake materials testing services during construction, including laboratory tests and field services for soil foundations, concrete construction, steel fabrication, and Hot Mix Asphalt (HMA) and precast concrete plant inspections, if applicable. QCC has worked with SWC on dozens of successful municipal bridge, roadway and building design projects and they possess all of the testing certifications required to perform these services.

Highway and Bridge Design Engineering Services in Support of LPA Projects	Anna Giraldi	Richard Wolf, Jr.	James Bouchard	Douglas Brodeur	Chad Michaud	Tyler Demers	Michael Ploof	Christopher Guida
Years of Experience	25	28	45	22	24	8	22	22
Years with Firm	10	16	14	1	22	8	13	13
Project Management	x	x	x	x				
Highway Design	x		x	x				
Bridge Design	x							
Structural Engineer	x							
Alternative Procurement Methods	x	x	x	x				
Corridor Study Planning			x	x				
Bridge Inspection	x	x	x					
Bridge Load Rating	x							
Hydrology and Hydraulics	x			x				
Environmental	x	x	x	x				x
Traffic Analysis			x	x				
Geotechnical Engineer					x	x		
Surveyor							x	
Public Involvement	x	x	x					
Certifications/ Training								
Local Public Agency (LPA) Parts 1&2	x	x	x	x				
Local Public Agency (LPA) Right-of-Way			x					
OSHA 10-Hour Card	x	x	x					
Certified National Bridge Inspector (FHWA)	x							
Certified Wetlands Scientist (CWS)								x
Certified Soil Scientist (C.S.S.)								x

REFERENCES

Town of Antrim, NH
Ms. Donna Hanson
(former Town Administrator)
txflma@gmail.com
(978) 857-8488

Cutler Shop Dam, NHDES Dam #D009012
White Birch Point over Great Brook, Br. No. 134/088, NHDOT #14846
Bridge Inspection and Repair CIP
North Main Street over Miller Brook, Br. No. 172/088, NHDOT #15255
Old North Branch Road over North Branch River, Br. No. 130/149, Federal #X-A000(927), NHDOT #14944
Depot Street over Contoocook River, Br. No. 184/071, NHDOT #15349A
Water Street over Great Brook, Br. No. 178/069, NHDOT #15350
Depot Street over Relief (Slab), Br. No. 183/071, NHDOT #14941 Depot Street over Relief (Arch), Br. No. 181/071, NHDOT #14940
West Street over Great Brook, Br. No. 173/075, NHDOT #29468
Gregg Lake Dam CIP, NHDES Dam #D009003
High Street over Great Brook, Br. No. 174/070, NHDOT #14942
Town Hall Tower, Structural Repairs

Town of Merrimack, NH
Mr. Kyle Fox, PE
(former Public Works Director)
(978) 692-5520
kfox@westfordma.gov

Wasserman Heights Detention Pond Dam
Conservation Drive Retaining Wall Construction
Twin Bridges Park, Replacement Pedestrian Bridge over Baboosic Brook
Naticook Road Drainage Study
Amherst Road Culvert Replacement
Steep Street Drainage System Repair
Turkey Hill Road Drainage Study
Wire Road over Baboosic Brook, Br. No. 098/174, NHDOT #15839
McGaw Bridge Road over Baboosic Brook, Br. No. 116/137, NHDOT #13923
Bean Road over Baboosic Brook, Br. No. 072/155, NHDOT #29736
Bedford Road over Baboosic Brook, Br. No. 113/159, NHDOT #15841
Souhegan River Pedestrian Trail, A(004)357, NHDOT #40300
US Route 3 over Baboosic Brook, Br. No. 118/135, NHDOT #29174
Stowell Road Covered Bridge Roof Replacement
Pedestrian Bridge Evaluation over Souhegan River, Br. No. 112/115
US Route 3 over Baboosic Brook FEMA BRIC Funding Benefit Cost Analysis

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Town of Richmond, NH
Ms. Susan Harrington
Town Administrator
105 Old Homestead Highway
Richmond, NH 03470
(603) 239-4232
susan.harrington.richmond@gmail.com

Fay Martin Road over Tully Brook Br. No. 160/071, NHDOT #21190
Tully Brook Road Bridge over Tully Brook Br. No. 155/066, NHDOT #29056
Whipple Hill Road over Roaring Brook Br. No. 065/083, NHDOT #29055
Fay Martin Road Drainage Design Improvements

CAT

ANNA GIRALDI, PE

Project Manager/Design Engineer of Record

agiraldi@quantum-cc.com | (603) 224-0859 | quantum-cc.com

EXPERTISE

- Bridge Design
- Bridge Rehabilitation
- Hydrologic and Hydraulic Studies
- Construction Administration and Observation

EDUCATION

Georgia Institute of Technology *Civil Engineering*
BS | MS

PROFESSIONAL REGISTRATION

Maine..... #17114
New Hampshire . #14411
Vermont ..... #018.0135095

CERTIFICATIONS

- NHDOT LPA Parts 1 and 2 Cert. # 1289
- Certified National Bridge Inspector, FHWA
- OSHA 10 Hour

CONTINUING EDUCATION

- Accelerated Bridge Construction (ABC)
- Precast and Prestressed Products

Quantum
Construction
Consultants, LLC
27 Locke Road
Concord, NH 03301

PROFESSIONAL EXPERIENCE

Ms. Giraldi has over 25 years of in-depth and diverse civil and structural experience in engineering design, construction administration and observation. Her roles have included bridge rehabilitation, bridge replacement, hydrology and hydraulic analyses, as well as the development and implementation of engineering plans for projects. She has developed numerous types of projects from schematic design to completion during construction. The vast majority of Ms. Giraldi's experience is with municipal and NHDOT state projects.

EXPERIENCE

NHDOT #29174 US Route 3 over Baboosic Brook, *Merrimack, NH*
In charge of all design, plan development, permitting and cost estimating, for this complete replacement of an existing 20-foot span circular concrete arch culvert with a 121-foot span steel girder bridge on concrete integral abutments. Other services include wetlands permitting, cost estimating and heavy utility coordination as there are both overhead and underground utilities in the project area.

Souhegan River Pedestrian Trail, NHDOT Project No. 40300 Federal Project No. X-A004(357), 14-15TAP, *Merrimack, NH*
Design, permitting, and bidding administration for an American Disabilities Act accessible trail that will provide connection from Watson Park to the existing Souhegan River Path through the former impoundment area of Merrimack Village Dam. Watson Park is located to the east of U.S. Route 3 with frontage on the northern bank of the Souhegan River, and was developed on former industrial land. The project is being funded by New Hampshire Department of Transportation through the Federal Highway Administration's Transportation Alternatives Program.

NHDOT #14633H Federal #AC-A004(376) I-93 Widening, Manchester
NHDOT #15684 Charcoal Road over Charcoal Brook, Dublin
NHDOT #16175 Pelham Road over Second Brook, Hudson
NHDOT #22892 2nd NH Turnpike over South Branch of the Piscataquog River Francestown
NHDOT #15764 Woodward Hill Road over Brennan Brook, Francestown
NHDOT #15762 Juniper Hill Road over Brennan Brook, Francestown
NHDOT #13698 Bean Hill Road, Northfield
NHDOT #14944 Federal Project #X-A000(927) Old North Branch Road over North Branch River, Antrim
NHDOT #14928 FEMA-1695-DR-NH Old Marlborough Road over Charcoal Brook, Dublin
NHDOT #21190 Fay Martin Road over Tully Brook, Richmond
NHDOT #14940 14941 Depot Street over Reliefs, Antrim
NHDOT #14846 FEMA–1610-DR NH White Birch Point Road over Great Brook, Antrim
NHDOT #15255 North Main Street over Miller Brook, Antrim
NHDOT #14839 Federal Project #X-A000(567) Winnipesaukee River Trail, Northfield
City of Manchester Bridge Repairs, Manchester

DOUGLAS V. BRODEUR, PE

Senior Civil Engineer

dbrodeur@hlturner.com | (603) 228-1122 | hlturner.com

EXPERTISE

- Land Development Design & Engineering
- Land Use Regulations/ Permitting
- Construction Oversight & Contract Administration
- Interdisciplinary Coordination
- Utility Design

EDUCATION

University of New Hampshire *Civil Engineering, BS*

PROFESSIONAL REGISTRATION

- Massachusetts ..... PE #56168
- New Hampshire .... PE #12986
- NHDES SDS 1619 (Septic)
- SIT 605
- NCEES Record ID 21-654-50
- NHDOT LPA Parts 1 and 2 Cert. # 2227

AFFILIATIONS

- ASCE: American Society of Civil Engineers
- NSPE: National Society of Professional Engineers
- NCEES: National Council of Examiners for Engineering & Surveying
- GSOWA: Granite State On-site Wastewater Association
- American Red Cross

The H.L. Turner Group Inc.
27 Locke Road
Concord, NH 03301

PROFESSIONAL EXPERIENCE

Mr. Brodeur has over 20 years of experience as a civil engineer and project manager. He is skilled in construction management including sewer pump station, wetland crossing, and stormwater management, design and reports. As well as hydrologic and hydraulic studies of watersheds, wetland permitting, and construction site inspections. He's worked on a variety of projects including commercial, residential apartment complexes and subdivisions, retail outlet malls, roadways, natural gas pipelines and flood remediation studies.

EXPERIENCE

Municipal:

Lower Bay Road, *Sanbornton, NH*

Chief engineer assigned to a 1.1-mile full road redesign, funded by the NHDOT state aid highway program, which was originally a state class II right-of-way and accepted as a class IV rural highway by the Town of Sanbornton upon completion. Responsibilities included landowner negotiation and acquisition of temporary and permanent easements, drafting the planning and engineering report per NHDOT requirements, project drawing and job specifications, permitting including NHDES wetlands dredge and fill and comprehensive shoreland protection approvals, preparation of bidding documents and assisting the town with contractor selection, and oversight of construction work for quality and budget management.

Educational:

Goffstown Kindergarten, *Goffstown, NH*

Project manager in charge of the design and permitting of the 'Glen Lake' school site plans, in the last community in the United States to not have a public kindergarten. The original location for the school [Tibbetts Hill Site] was abandoned due to it being mired in lawsuits, additionally, the project was politically controversial in the community with a well-organized opposition group. Work included the vetting of the site, conceptual development, permitting documents (including NHDES Alteration of Terrain, Wetlands Dredge & Fill, and Septic Construction Approval), presentations and courtesy approvals of both Select Board and Planning Board, and full design plan and specification development for construction in concert with the project architect.

Multi-Unit Residential:

Tenney Place Apartments, *Haverhill, MA*

Project manager in charge of all design and permitting efforts for a 144-unit residential apartment complex, including sewer pump station design, stormwater management design, and wetlands permitting. Tenney Place was permitted under Massachusetts 40B process, consists of four, three to four-story apartment buildings and features a free-standing community building with a fitness center, community spaces, and a tot lot located at the back of the community. The Energy Star-certified buildings were constructed using modular technology and will contain a mix of one, two, and three-bedroom units.

JAMES BOUCHARD

Senior Roadway Engineer

jbouchard@quantum-cc.com | (603) 228-0859 | quantum-cc.com

EXPERTISE

- Roadway Design
- Drainage Design
- Historic Masonry Bridges
- Project Management
- Construction Administration

EDUCATION

University of Maine
Civil Engineering BS

CERTIFICATIONS

- NHDOT LPA Parts 1 and 2 Cert. # 1117
- NHDOT LPA Right-of-Way
- Maine DOT Local Project Administration

CONTINUING EDUCATION

- FHWA UHPC Bridge Connections for Prefabricated Bridge Elements
- Project Management
- Water Supply & Treatment
- Water Utilization Policy
- Stormwater Management
- Traffic Calming Measures
- Transportation Planning
- Wastewater Treatment

Quantum Construction Consultants, LLC
27 Locke Road
Concord, NH 03301

PROFESSIONAL EXPERIENCE

Mr. Bouchard has over 40 years of experience in administering and managing construction projects of very diverse aspects including municipal and state roadway improvements, reconstruction and realignment; intersection improvements; bridge rehabilitation and replacement; historical bridge preservation; transportation alternative programs including recreational trails, paths and sidewalks; and all aspects of water and wastewater utility infrastructure. In addition, Mr. Bouchard has coordinated construction activities with private utility relocations; contaminated soils, water and vapor encounters during construction; and overseen historical and archaeological construction requirements. Construction funding administration has included NHDOT SBA & SHA; FHWA; NDHES SAG and SRF, EPA CWSRF; FEMA; USDA Rural Development; CDBG and EDA grants.

REPRESENTATIVE PROJECTS

McGaw Bridge Road over Baboosic Brook, *Merrimack, NH*
Handled the civil design and permitting for replacement of a deteriorated jack arch bridge. A new 42-foot span, steel beam bridge with an exposed concrete deck with stainless steel reinforcement with concrete abutments founded on bedrock was constructed. Due to its historic nature, the project required extensive coordination with cultural resource agencies for Section 106 mitigation.

Water Street over Great Brook, *Antrim, NH*
Provided the civil design and permitting of an emergency bridge replacement. A deteriorated corrugated metal pipe was severely undersized and suffered damage during flood. A fast track design was implemented for a 20-foot precast concrete rigid frame bridge founded on spread footings with stem walls.

ADDITIONAL EXPERIENCE

NHDOT #15255 North Main Street over Miller Brook, Antrim
NHDOT #15349A Depot Street over Contoocook River, Antrim
NHDOT #14940 14941 Depot Street over Reliefs, Antrim
NHDOT #15839 Wire Road over Baboosic Brook, Merrimack
NHDOT #29174 US Route 3 over Baboosic Brook, Merrimack
NHDOT #15841 Bedford Road over Baboosic Brook, Merrimack
NHDOT #26762 Willow Street over Beaver Brook, Pelham
NHDOT #14842 High Road over North River, Lee
NHDOT #40617 Pleasant Valley Road over Heath Brook, Wolfeboro
NHDOT #15403 Federal Project #X-A000(928) High Haith Road over Squam Lake Canal, Center Harbor
NHDOT #14846 FEMA 1610-DR NH White Birch Point Road over Great Brook, Antrim
NHDOT #14944 Federal Project #X-A000(927) Old North Branch Road over North Branch River, Antrim

RICHARD WOLF, JR.

Construction Administrator

rwolf@quantum-cc.com | (603) 224-0859 | quantum-cc.com

EXPERTISE

- Bridge Design & Construction
- Construction Administration
- Project Management
- Structural Observation
- Existing Conditions Reports
- Building Construction
- Building Renovation

EDUCATION

New Hampshire Technical Institute *Architectural Engineering Technology* AS

CERTIFICATIONS

- NETTCP QA Technologist Certification #461
- NHDOT LPA Parts 1 and 2 Cert. # 1292
- OSHA 10-Hour Card
- NHDOT 2-Day Construction Inspection Training

CONTINUING EDUCATION

- FHWA UHPC Bridge Connections for Prefabricated Bridge Elements
- Accelerated Bridge Construction (ABC)

Quantum Construction Consultants, LLC
27 Locke Road
Concord, NH 03301

PROFESSIONAL EXPERIENCE

Mr. Wolf has more than 25 years of experience providing construction administration and construction observation services on a variety of education, transportation, commercial, industrial, municipal and state projects. Projects have included new bridges and roadways, rehabilitation of bridges, new buildings, building renovations, and site work. Mr. Wolf is experienced utilizing a variety of building materials and he is proficient in all aspects of project management and construction administration duties relating to the construction and rehabilitation of bridges, roadways, site work, dams, buildings and much more.

EXPERIENCE

Gregg Lake Dam Capital Improvement Plan (CIP), *Antrim, NH*
Developed a CIP for the Town in response to a NHDES Dam Bureau Letter of Deficiency after their inspection of the Gregg Lake Dam in 2016. Tasks performed included existing document review, field observations to visually evaluate the dam structure, and development of a plan to identify deficiencies and maintenance items, prioritize repairs, provide photo documentation and an opinion of construction cost for repairs, including related permitting and engineering costs. The CIP was completed and submitted to the Town and the NHDES Dam Bureau in September of 2020, and became an instrumental piece of information in 2022 when portions of the CIP were utilized to assist the Town in completing an ARPA Dam Rehabilitation Grant Application through the NHDES Dam Bureau. The Town is currently in the process of finalizing a $961,000 grant which was awarded to the project by the NHDES Dam Bureau. When finalized, these funds will be used in conjunction with Town funding to provide required rehabilitation to the dam.

Pleasant Valley Road over Heath Brook, *Wolfeboro, NH*
Replacement of two heavily corroded and undermined corrugated metal pipe (CMP) arches constructed in 1960 that were located in designated prime wetlands. The replacement structure is a 25-foot span prestressed concrete deck slab founded on steel H-piles with a concrete pile cap and butterfly wingwalls. To protect the designated prime wetlands, the new road has granite curbing to contain the runoff within the paved roadway. All of the roadway runoff in the vicinity of the bridge is channeled to a stormwater treatment area off the site.

NHDOT #15350 Water Street over Great Brook, Antrim
NHDOT #14940 14941 Depot Street over Reliefs, Antrim
NHDOT #15349A Depot Street over Contoocook River, Antrim
NHDOT #29468 West Street over Great Brook, Antrim
NHDOT #15255 North Main Street over Miller Brook, Antrim
NHDOT #14944 Federal Project #X-A000(927) Old North Branch Road over North Branch River, Antrim
NHDOT #14846 FEMA 1610-DR NH White Birch Point Road over Great Brook, Antrim
Bridge Capital Improvement Plan, Antrim
DPW #80985R Salt Storage Building, Contract C, Pinkham Notch
DPW #80985R Salt Storage Building, Contract C, Milan

The following subconsultant representatives have actively participated on numerous QCC projects:

Fieldstone Land Consultants, PLLC:

Michael D. Ploof, LLS – Surveyor/ Project Manager/ Partner
Education: University of New Hampshire, Thompson School of Applied Science, Associates of Applied Science, Civil Engineering Technology // Registrations – NH LLS #946, O.S.H.A. Hazardous Materials Technician (29 CFR 1910.120) current Received the NHLSA "Outstanding Survey Technician Award", December 2001

Mr. Ploof applies over 20 years of surveying experience to his position as an Owner / Partner of Fieldstone Land Consultants, PLLC. He is responsible for overseeing all aspects of Survey Operations, and is primarily involved with project proposals, contract negotiations, marketing, boundary & plan review, and survey personnel management. Mr. Ploof also continues to manage land development and construction related projects, coordinating field and office work, state and federal permitting, and representing clients before municipal boards.

Christopher A. Guida, C.S.S., C.W.S. – Certified Soil & Wetland Scientist / Partner
Education: University of New Hampshire, Bachelors of Science, Water Resource Management, // Registrations – NH Certified Wetland Scientist #53, NH Certified Soil Scientist #91, NHDES Licensed Subsurface System Designer #1401, NH Certified Septic Evaluator #18, Massachusetts Certified Soil Evaluator #13488, U.S. Army Corps of Engineers Wetland Delineator Certification, O.S.H.A. 40 Hour HAZWOPER Certification

Mr. Guida applies over 20 years of environmental science experience to his position as an Owner / Partner of Fieldstone Land Consultants, PLLC. He is responsible for overseeing all aspects of environmental services offered by Fieldstone Land Consultants, PLLC. He interacts daily with a wide variety of clients, contractors, state and local officials. Mr. Guida is responsible for managing, scheduling and conducting all phases of project development, including marketing, field work, design, and project presentations to governing authorities.

S.W. Cole Engineering, Inc.:

Chad Michaud, P.E. – Executive Vice President, Chief Operating Officer, Senior Geotechnical Engineer
Education: University of Maine – B.S. Civil Engineering // PE Registrations – NH, ME, CT, RI, & VT.

As Senior Geotechnical Engineer, Chad oversees a staff of geotechnical engineers providing coordination of subsurface investigations and geotechnical design and specifications. He has extensive experience with numerous NHDOT municipally managed / LPA bridge projects.

Tyler Demers, PE – Project Geotechnical Engineer
Education: University of New Hampshire – M.S. Geotechnical Engineering // University of Maine, B.S. Civil Engineering // PE Registrations – NH, ME, & VT

Tyler started with the firm in 2011 while home from the University of Maine during the summer months. Tyler worked as a laboratory and field technician through his college years. Following completion of this master's degree at the University of New Hampshire, Tyler was hired as a full time geotechnical engineer. Tyler is now a licensed Professional Engineer in New Hampshire, Maine, and Vermont and holds the position of Project Geotechnical Engineer for S.W. Cole and Office Manager at their Somersworth office.

APPLICABLE WORK EXPERIENCE

US Rte. 3 over Baboosic Brook
NHDOT #29174 | Merrimack, NH

This Project is in Preliminary Design: Engineering Study with Alternatives Evaluation; Coordination of Relocation of Aerial Utilities, Underground Communications Gas, & Water currently ongoing; FEMA BRIC Grant BCA for outside funding completed; Historical Resource coordination completed, and Natural Resource coordination is ongoing.

The existing 20-foot span, cast concrete circular arch bridge will be replaced with a 121-foot span steel girder bridge on integral abutments. Horizontal geometries for the roadway will be replicated while vertical geometries will be raised approx. 2-feet at the crossing. The project includes a temporary 2-lane detour and bridge for traffic control during construction.

The bridge and associated roadway for US Rte. 3 are within the Urban Compact area of the Town and therefore, while still on the Federal Highway System, is maintained by the Town and not NHDOT. Due to the high project costs, and originally not able to be funded by NHDOT SAB, QCC on request of the Town undertook a Benefit Cost Analysis (BCA) for FEMA BRIC grant funding as additional match. The project was not deemed eligible by FEMA but NHDOT has since obligated IIJA funds to the project for accelerated SAB bridge.

Tully Brook Road over Tully Brook
NHDOT #29056 | Richmond, NH

Design & Permitting Serviced Provided: Final Design of an Accelerated Design has been completed; Engineering Study with Alternatives Evaluation; Coordination of Relocation of Aerial Utilities; Historical and Natural Resource coordination completed; Bidding Assistance.

The existing crossing is a 56-foot long, corrugated metal pipe arch culvert approximately 14' span x 8.5' rise located on a dead end road. The bridge was recently subjected to load rating down posting by NHDOT due to deterioration and severe critical deficiencies.

The replacement bridge will be a 49-foot span steel girder bridge on concrete cantilevered abutments. The longer span is resultant of natural resource permitting requirements. The project includes a temporary on-site single lane detour and bridge for traffic control during construction.

At the request of the Town, and as QCC coordinated with NHDOT, this project is on an accelerated NHDOT SAB schedule so as to replace the existing structure in 2023.

Old Route 110 over Upper Ammonoosuc River NHDOT #15815 | Dummer, NH

Design & Permitting Services Provided: Meetings & Negotiation with RR Company for work within their ROW and for track reconstruction; Alternatives Study that evaluated Removal and Rehabilitation of the bridge; Abutter Meetings for alternatives; Preliminary & Final Design for tall stem abutments next to railroad; Permitting with RR, NHDES Wetlands; Bidding Assistance; and Contract Award.

The bridge replacement structure is an 80-foot span steel girder superstructure founded on concrete abutments. The west approach to the bridge is located within the Saint Lawrence & Atlantic Railroad (SL&A) right-of-way and an active railroad line requiring extensive coordination for construction activities and schedule. Excavation for the west abutment, encountered a buried stone retaining wall for the railroad tracks and a large rubble pile of cut masonry blocks that prohibited the installation of proposed shoring to stabilize the railroad during construction. QCC championed a redesign with the project stakeholders including NHDOT and SL&A and oversaw construction of an approach that allowed for construction to continue on an amended time schedule.

The onset of Covid-19 forced a travel suspension for the Vermont construction company requiring QCC to re-coordinate the construction schedule and make additional revisions to the Town's Agreement with SL&A.

Pleasant Valley Road over Heath Brook NHDOT #40617 | Wolfeboro, NH

Design & Permitting Services Provided: Temporary on-site Detour road and bridge over prime wetlands; storm drainage treatment; Aerial Utility Relocation; Preliminary & Final Design; Permitting with NHDES Wetlands; Bidding Assistance; and Contract Award.

The existing Municipal Redlist twin culverts were replaced with a 28-foot span prestressed concrete butted deck beam superstructure founded on steel H-piles with concrete cap and butterfly wingwalls. The abutting wetlands, deemed prime wetlands by the Town, as well as one parcel under conservancy management required addressing sensitivity issues during construction. As the existing road is a dead-end road servicing 1200 parcels, a temporary single lane, signalized detour road and bridge was constructed on the prime wetlands. QCC coordinated the construction and removal of the temporary detour road with the local Conservation Commission and achieved very positive results. Additionally, QCC coordinated with the Town and the local conservancy for the temporary relocation of aerial utilities onto the conservancy lands. As construction ensued, the conservancy and the Conservation Commission desired the preservation of an exemplary bull pine tree, requiring QCC to coordinate the redesign of the stormwater vegetated treatment swale with the local agencies and the NHDES Wetlands Bureau.

Willow Street over Beaver Brook NHDOT #26762 | Pelham, NH

Design & Permitting Services Provided: Meetings with NHDRED NHNHB for identification of scope for a riverine floodplain study for location and inventory of 3 exemplary species of flora; aerial utilities relocation; alternatives study for flood relief structure; Preliminary & Final Design; Permitting with NHDES Wetlands, NHDRED NHNHB, and ACOE; Bidding Assistance; and Contract Award.

The replacement bridge is a 104-foot span steel beam superstructure with integral abutments consisting of cast-in-place concrete pile caps supported on steel H-piles. The project also featured the reconstruction of approximately 400 linear feet of roadway with a new sidewalk as non-participating work scope within the project requiring the monitoring and accounting of the non-participating quantities of work for construction, QA/QC and identification within the Contractor's Application for Payments.

Outreach for aerial utility relocation coordination was undertaken by QCC in conjunction with the Contractor, to reactivate forgotten previous work scope agreements with the aerial utility companies so as to maintain the Contractor's proposed schedule.

Natural Resource permitting conditions required the protection of exemplary plant species within the project work zone, necessitating coordination of construction activities within the active growing cycle of the various species.

Salt Storage Building Engineering NHDAS DPW #80985R | Milan, NH

Design Services Provided: Development of Standard Salt Storage Building Design for reuse on multiple sites by NHDAS DPW; Design & Final Design including coordination and management of building subconsultants; Bidding assistance to NHDAS; Construction Observation Services.

QCC provided structural building design and construction engineering services for this Salt Storage Building located at NHDOT District 1 Patrol Shed 106. When completed, the structure was capable of receiving salt deliveries that could be unloaded within the building due to the 30-foot interior clear height. In addition to designing the building, QCC was responsible to perform cantilevered retaining wall reinforcing installation observations, concrete placement observations, wood framed wall construction inspection, and oversee installation of the long span prefabricated wood roof trusses and roof diaphragm construction.

QCC also received and reviewed all test results provided for the project to confirm the requirements of the plans and specifications were being met. Direct coordination with the DPW Project Manager throughout construction provided for a successful project delivered on schedule and budget.

Souhegan River Pedestrian Trail
Federal Project #X-A004(357)
NHDOT #40300
Merrimack, NH

Design & Permitting Services Provided: Meetings and negotiations with NHDHR for repurposing of extant historical remnants of the Merrimack Village Dam; design of a precast concrete elevated boardwalk in response to NHDES Wetlands Bureau negotiations; design of reconstructed cantilevered sidewalk as an at grade sidewalk supported on foamed glass aggregate.

This stone dust surfaced pedestrian trail of approximately 660 linear feet provides connectivity from Watson Park within the central business area of the Town with existing trail network accessing school properties and residential areas west of the F.E. Everett Turnpike.

The project includes crossing of the emergent wet meadow area of the former Merrimack Village Dam (MVD) and repurposing of the MVD's extant head gate structure, power canal and granite stone canal arch of the historic Chamberlain Bridge to facilitate a crossing under U.S. Route 3.

Old Marlborough Road over Charcoal Brook
NHDOT #14928, FEMA-1695-DR-NH
Dublin, NH

Design & Permitting Services Provided: H&H analyses for minimizing the structure size due to large wetlands receiving area upstream of crossing; negotiations with NHDOT & NHDES Wetlands to allow for reduced waterway opening; negotiations with the Dublin Lake Golf Club for roadway realignment and guardrail systems; Preliminary & Final Design; Permitting with NHDES Wetlands; Bidding Assistance, and Contract Award.

A failed 8-foot high x 12-foot span corrugated metal pipe arch was replaced with an 11-foot high by 12-foot span precast concrete box culvert with natural streambed material placed on the bottom of the culvert to restore aquatic connectivity.

The project abuts the Dublin Lake Club (DLC), a local private golf course, and the roadway was deemed a scenic roadway. As such, tree removal for the project was coordinated with the DLC and the irrigation intake for the DLC was relocated to an amenable location for continued irrigation service during construction. Coordination with the DLC included maintaining security of the construction site, DLC's participation in selection of texturing and coloration of the precast components, and construction schedule.

Old North Branch Road over North Branch River
NHDOT #14944, Federal Project #X-A000(927)
Antrim, NH

Design & Permitting Services Provided: Negotiations with NHDHR for historic structure; alternative report for NHDOT for improvements to River Road versus bridge replacement; Preliminary & Final Design; Permitting with NHDES Wetlands and NHDHR; Bidding Assistance and Contract Award.

The critically deficient 44-foot span steel girder bridge supported on dry laid stone abutments was replaced with an 80-foot span steel plate girder bridge founded on concrete abutments.

Immediately at construction start the aerial utilities notified the contractor and the stakeholders that permanent aerial utility relocation over the North Branch River would be sought requiring a NH Public Utilities Commission license. This year long process required QCC's continued coordination with utility companies and the NHDPUC, and required QCC to negotiate a delay of work change order with the Contractor for approval by NHDOT & FHWA.

During the delay, an unknown closed drainage system failed within the roadway designated for reconstruction. QCC coordinated a site review meeting with the NHDOT, FHWA and the Town, and reached a resolve from FHWA for additional road reconstruction with a replaced drainage system.

Bean Hill Road Reconstruction
NHDOT #13698 | Northfield, NH

Construction Services Provided: Managed Project Submittals, Project Documentation, Part-Time Onsite Observation, NHDOT District 3 Coordination for Overlap Activities, Budget Management, Project Meetings, QA/QC, Project Closeout.

This 6300 linear foot road reconstruction included in-place pavement reclamation and rehandling for installation of base gravel reinforcement and additional crushed gravels, new closed drainage systems located within roadside drainage swales, and new pavements. Superelevated roadway segments were constructed as full roadway box-out construction. An existing 72-inch CMP was sliplined to preserve and enhance the service life of this deep culvert.

During construction, NHDOT District 3 (District) became concerned with the potential from increased channelized drainage swale run-off entering their systems. An on-site meeting with QCC, NHDOT Bureau of Community Planning & Assistance, District, Town, and Contractor yielded a resolve and modification of project requirements to assist District with their maintenance operations during construction.

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